Read This First

Getting Started

With Your Macintosh IIsi

Includes setup information

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Contents

Radio and television interference ii

■ Setting Up 1

Plugging in the computer 2
Connecting a monitor 3
Connecting the mouse and keyboard 4
Connecting the microphone 5
Connecting peripheral devices and network cables 6
Turning the computer on 6
Problems starting up? 7
Working comfortably 8
What's next? 8

■ Learning the Basics 9

Showing colors on your monitor 12
Turning the computer off 14
Important safety instructions 14

■ Your Computer at a Glance 16

■ Technical Information 18

Expansion slot and cards 18
Installing an expansion card 19
Optional floating-point math coprocessor 30
Reset and interrupt switches 31
Locking power button 31
Built-in video support 32
Specifications 33

Important

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. See instructions if interference to radio or television reception is suspected.

Radio and television interference

The equipment described in this manual generates, uses, and can radiate radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple's instructions—it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

You can determine whether your computer system is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the computer to one side or the other of the television or radio.
- Move the computer farther away from the television or radio.
- Plug the computer into an outlet that is on a different circuit from the television or radio. (That is, make certain the computer and the television or radio are on circuits controlled by different circuit breakers or fuses.)

If necessary, consult your authorized Apple dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet, prepared by the Federal Communications Commission: *Interference Handbook* (stock number 004-000-00345-4). This booklet is available from the U.S. Government Printing Office, Washington, DC 20402.

△ **Important:** Changes or modifications to this product not authorized by Apple Computer, Inc., could void the FCC Certification and negate your authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of shielded cables and connectors between system components. It is important that you use shielded cables and connectors to reduce the possibility of causing interference to radios, television sets, and other electronic devices. For Apple peripheral devices, you can obtain the proper shielded cables from your authorized Apple dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance. △

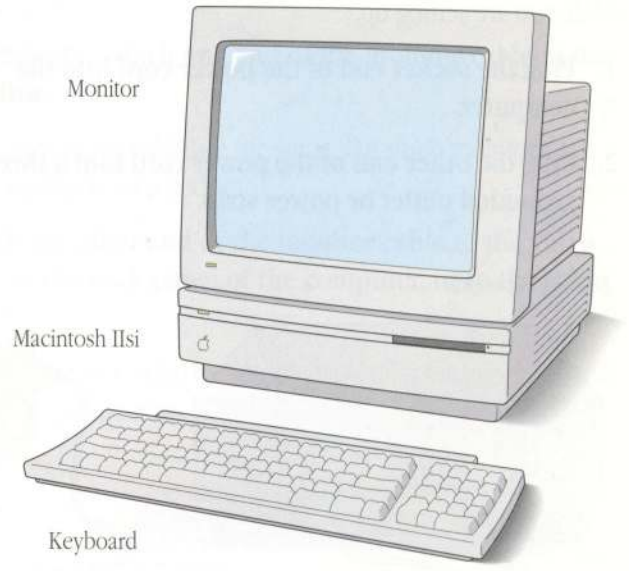
DOC Class B Compliance This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the radio interference regulations of the Canadian Department of Communications.

Observation des normes—Classe B Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Classe B prescrites dans les règlements sur le brouillage radioélectrique édictés par le Ministère des Communications du Canada.

Setting Up

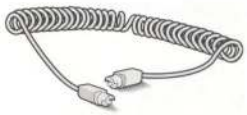
Setting up your Macintosh IIsi involves these steps:

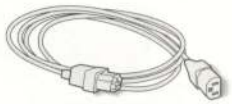
- Plugging in the computer
- Connecting a monitor
- Connecting the mouse and keyboard
- Connecting the microphone
- Connecting peripheral devices and network cables
- Turning on the computer



Mouse

Monitor cable


Keyboard cable


Monitor power cord

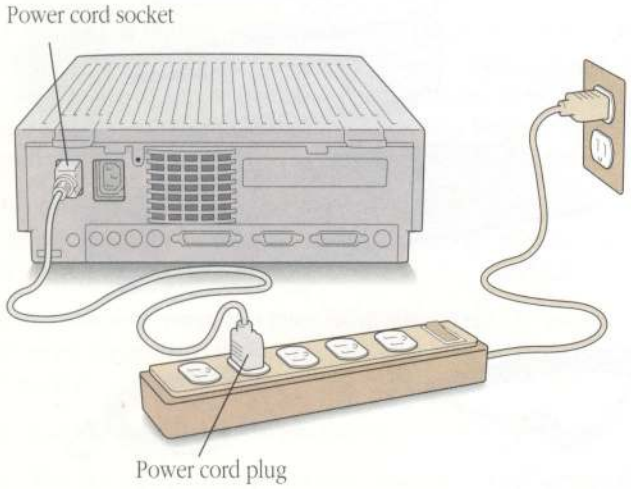
Microphone

Computer power cord

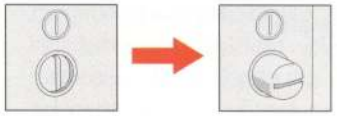
Plugging in the computer

Plug in the Macintosh before connecting anything to it. The plug grounds the computer and protects it from electrical damage while you are setting up.

1. **Plug the socket end of the power cord into the computer.**
2. **Plug the other end of the power cord into a three-hole grounded outlet or power strip.**



❖ *If the computer starts up:* If you hear a tone, insert a paper clip or small screwdriver into the notch in the power button on the computer's back panel, push it in, and rotate the button until the notch is in a horizontal position and the button pops out. To protect both yourself and the computer from electrical hazards, the Macintosh IIsi should remain turned off until you are finished connecting its parts. ❖



Connecting a monitor

The Macintosh IIsi provides built-in video support for the following Apple monitors:

- Macintosh 12" Monochrome Display
- Macintosh 12" RGB Display
- AppleColor High-Resolution RGB Monitor
- Apple Portrait Display

You can also use other types of monitors if you first install the appropriate video expansion card in your computer. For instructions, see "Installing an Expansion Card," later in this book. To connect your monitor, follow the steps below.

1. **Place the monitor on top of the computer.**

   If you have a very large monitor, such as an Apple Two-Page Display, place it next to the computer.

2. **If necessary, attach the monitor power cord to the monitor.**

   On some monitors, the cord is already attached.

3. **Plug in the monitor power cord.**

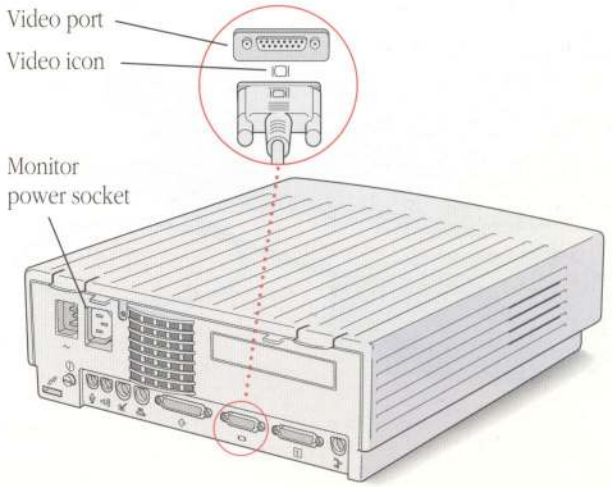
   You can plug the monitor into your computer or a grounded electrical outlet. (The Macintosh 12" RGB Display must be plugged into an electrical outlet.)

4. **If necessary, attach one end of the monitor cable to the monitor.**

   Both ends of the cable are the same. On some monitors, the cable is already attached.

5. **Attach the other end of the monitor cable to the video port on the back panel of the computer, or to the video card.**

   If you installed a video expansion card, plug the cable into the external connector on the card, not into the video port.



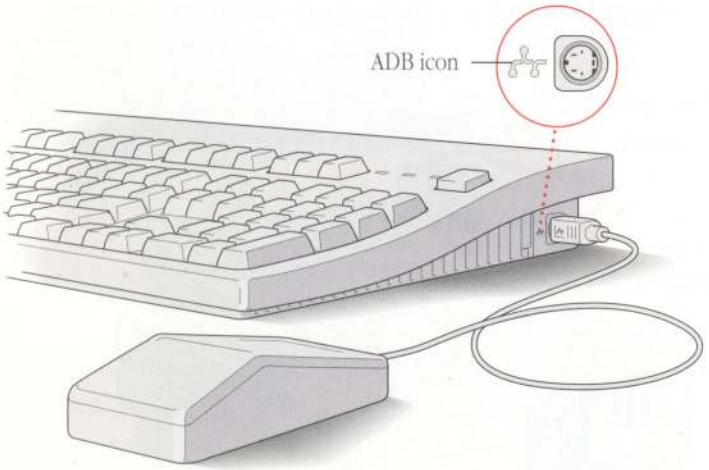
Connecting the mouse and keyboard

You have a choice of several keyboards for your Macintosh IIsi. They all connect the same way.

1. **Plug the mouse cable into the port on the right side of the keyboard.**

   If you prefer to use the mouse with your left hand, plug the mouse cable into the port on the left side of the keyboard.

   The plug and the port are both marked with an Apple Desktop Bus (ADB) icon. Align the icons before you insert the plug. (The positions of the port and icon on your keyboard may be slightly different from those pictured.)



2. **Plug one end of the keyboard cable (both ends are the same) into the other ADB port on the keyboard.**

   If you plugged the mouse cable in on the right, for example, then plug the keyboard cable in on the left.

3. **Plug the other end of the keyboard cable into the ADB port on the back of the computer.**

   The port is marked with the same ADB icon.

Connecting the microphone

To connect the microphone, follow these steps.

1. **Plug the microphone jack into the sound input port on the back panel of your computer.**

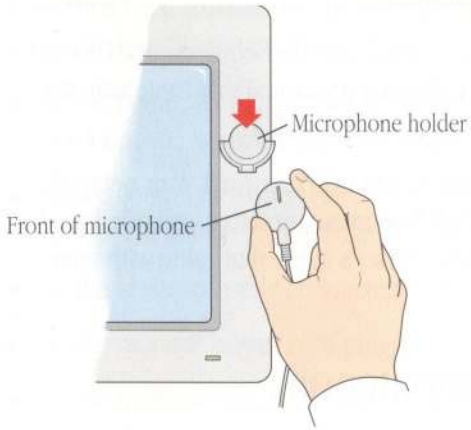
   The sound input port is marked with this icon:

2. **Decide where you want to place the microphone.**

   The microphone that comes with your computer can pick up sounds within a range of several feet. You may want to attach the microphone to the front of the monitor, the top of the keyboard, or simply place it on your desk.

3. **To attach the microphone to your computer, peel the paper backing off the microphone holder and press the adhesive side of the holder against a clean, flat surface.**

4. **Place the microphone in the holder.**



The microphone has no on/off switch. It is controlled by the programs you use to record sounds. (See Chapter 11 of your *Macintosh User's Guide* for more information on recording sounds.)

Connecting peripheral devices and network cables

If you bought a printer, a modem, or other equipment to use with your Macintosh IIsi, turn now to the manual that came with the equipment for instructions on connecting it.

To connect your computer to a network, consult your network administrator, the LocalTalk documentation that you purchased with your computer, or the owner's guide that came with your network system.

Turning the computer on

To turn on the computer for the first time, follow these steps.

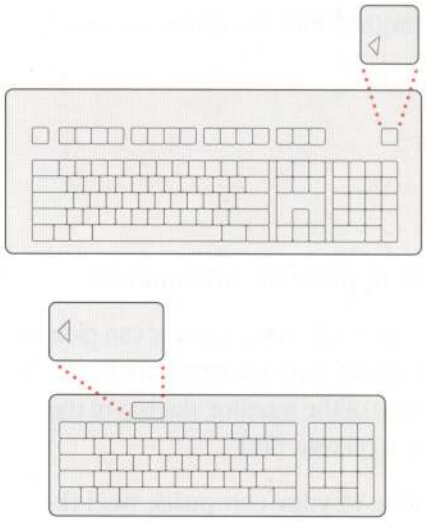
1. **Turn on your monitor.**

   If you have an Apple monitor, press the power button on the back of the monitor, marked with this icon:

   If the monitor is plugged into the computer, you can leave this button on. Turning the computer on and off also controls the monitor. (The Macintosh 12" RGB Display is an exception; it must be turned on separately each time you turn on the computer.)

2. **Turn on the computer by pressing the Power On key on the keyboard.**

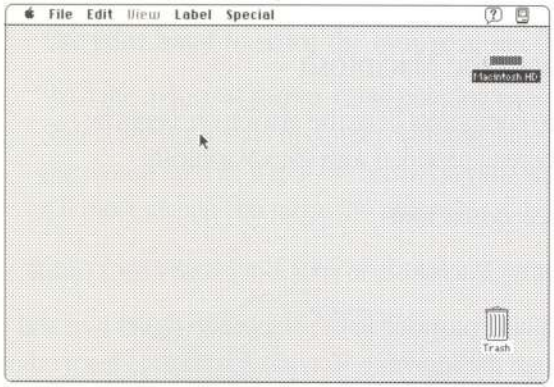
   The Power On key is marked with a triangle. Its location depends on which keyboard you have:



   You hear a tone from the computer as it starts up.

3. Check to see what's on your screen.

- If you see the Macintosh desktop, as shown here, your software is set up correctly.



- If you see a blinking question mark, you need to install system software on the computer's hard disk. (System software is a set of programs the computer uses to start itself up.) See Chapter 8 of your *Macintosh User's Guide* for instructions on installing system software.

❖ *A/UX users only:* If you purchased the A/UX operating system, turn to the *A/UX Installation Guide* for further instructions. ❖

Problems starting up?

If you don't see anything on the screen, check these items to see if you can identify the problem:

- Is the computer plugged into a power source? If it is plugged into a power strip, is the power strip turned on?
- Is the computer turned on? If you aren't sure, press the Power On key on the keyboard.
- Is the keyboard cable connected correctly?
- Is the monitor power cord plugged in?
- Is the monitor turned on? (Check the power-on light on the front of the monitor.)
- Is the monitor cable attached firmly to both the monitor and the computer?
- Is the brightness control on the monitor adjusted correctly?

If you still don't see anything on the screen, you may need to restart the computer. Turn the computer off by pressing the power button on the back of the computer. Then turn it on again by pressing the Power On key on your keyboard.

Working comfortably

As you work with your Macintosh, you may want to adjust the placement and height of your computer, your monitor, and your keyboard. You may also want to adjust your work habits so that you can get the most out of your work sessions. See Chapter 8 of your *Macintosh User's Guide* for tips on working comfortably.

What's next?

Your computer comes with a variety of training and reference materials. Depending on your computer experience and the way you use your computer, you may use all, some, or none of them.

If you know the Macintosh

If you are an experienced Macintosh user, you can start right now on your own work. If you have questions as you work, refer to the *Macintosh User's Guide.*

If you're new to the Macintosh

If you are new to computers or to the Macintosh, begin by reviewing the training provided with your Macintosh:

- the *Macintosh Basics* tour
- Part I, *Learning Macintosh,* in your *Macintosh User's Guide*

First take the training provided in the *Macintosh Basics* tour and then work through the *Learning Macintosh* section to learn other skills.

Learning the Basics

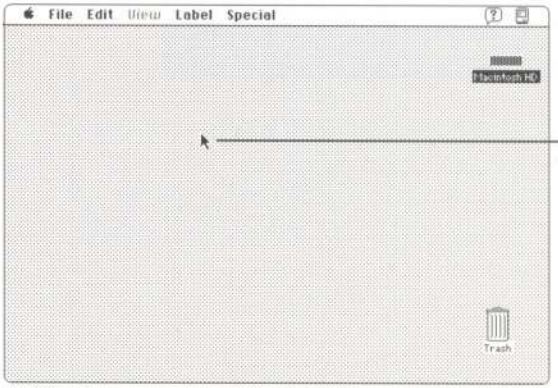
Follow these instructions to start the *Macintosh Basics* tour.

1. **Use your hand to scoot the mouse along the table.**

   Hold the mouse as shown, cable pointing away from you. Slide it so that it stays in contact with the table. Don't press the mouse button. Watch the arrow on your screen to see if it moves when you move the mouse.

2. **Notice that the arrow on the screen moves in the same direction that you move the mouse.**

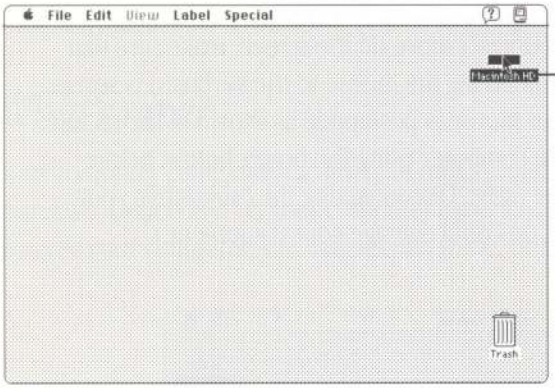
   If the arrow doesn't move on the screen, make sure that the cable connecting the mouse to the keyboard is secure and that your mouse is positioned as shown in the picture. (Turn off the computer using the power button before checking the cable. Disconnecting the cable while your computer is on could damage your equipment.)



continues ▶

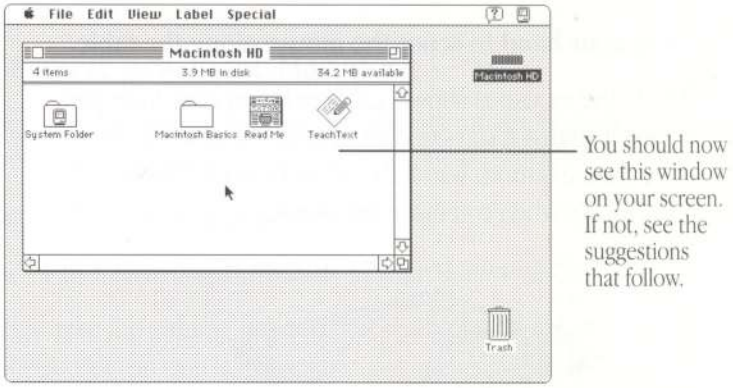
3. **Use the mouse to move the arrow over the picture labeled "Macintosh HD."**

   Make sure the tip of the arrow is inside the rectangle and not over the text.



4. **Being careful not to move the mouse, click the mouse button twice in a row.**

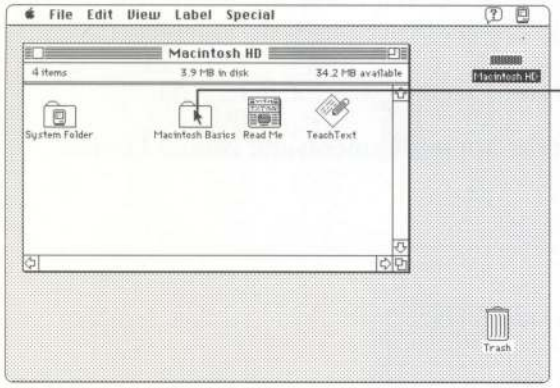
   Now your screen should look like this:



   If your screen does not look like this, try step 4 again, paying attention to the following:

   - Be sure to click twice.
   - Try clicking twice more quickly—but be sure not to move the mouse while you're clicking.

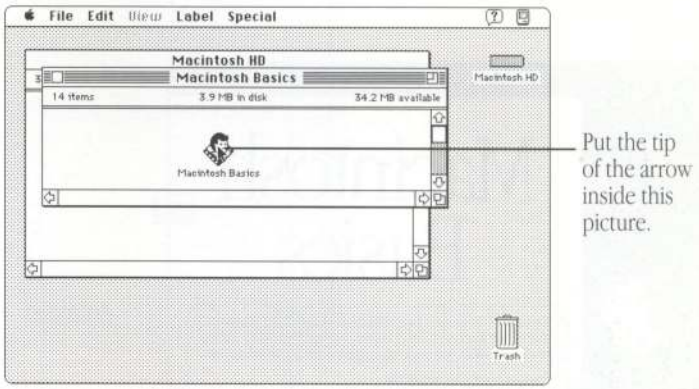
5. **Move the mouse to place the tip of the arrow inside the picture of a folder labeled "Macintosh Basics."**



6. **Being careful not to move the mouse, click the mouse button twice in a row.**

   Now your screen should look like the picture in the next step.

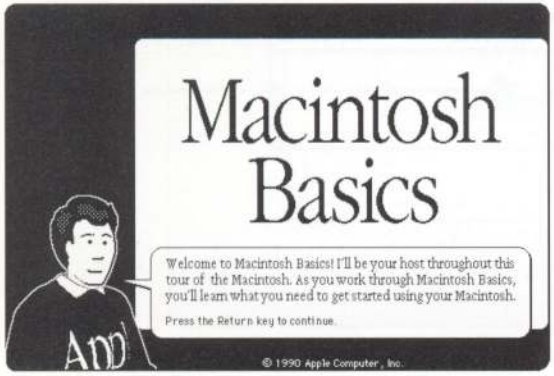
7. **Move the mouse to place the tip of the arrow inside the picture of a man labeled "Macintosh Basics."**



continues ▶

8. **Click the mouse button twice to start the tour.**

   Click twice. The tour begins in a few moments with the following screen:


Macintosh Basics
Welcome to Macintosh Basics! I'll be your host throughout this tour of the Macintosh. As you work through Macintosh Basics, you'll learn what you need to get started using your Macintosh.
Press the Return key to continue.
© 1990 Apple Computer, Inc.

9. **Now follow the instructions on the screen and work through *Macintosh Basics*. When you have completed *Macintosh Basics*, turn to the *Learning Macintosh* section of your *Macintosh User's Guide* to continue your training.**

Showing colors on your monitor

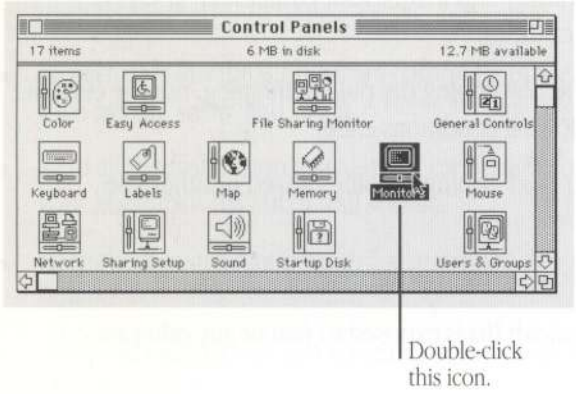
If you purchased a color or gray-scale monitor, you need to tell the computer to start displaying colors. If you don't have a color monitor, you can skip ahead to "Turning the Computer Off."

Before you begin: Make sure your computer is on.

1. **Pull down the Apple (🍎) menu and choose Control Panels.**

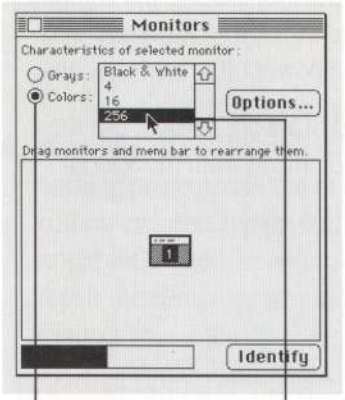
   The Control Panels window opens, as shown in the next step.

2. Double-click the Monitors icon.



The Monitors control panel opens, as shown in the next step.

3. Set the controls as shown in the figure.



The monitor begins displaying color immediately.

Turning the computer off

You've seen that you turn on both the monitor and the computer by pressing the Power On key at the top of your keyboard. However, this key does not turn the power off.

To turn the computer off at the end of a work session, use the mouse to choose the Shut Down command from the Special menu.

Choosing Shut Down readies the hard disk for a fast restart next time you turn on the computer. It also prompts you to save your work on a disk, if you haven't already done so, before turning the power off.

▲ **Warning:** Do not turn the computer off by pressing the power switch on its back panel. If you do so, you will lose any work you have not saved on a disk. ▲

Important safety instructions

For your own safety and that of your equipment, always take the following precautions.

Disconnect the power plug (by pulling the plug, not the cord) if any of the following conditions exists:

- the power cord or plug becomes frayed or otherwise damaged
- you spill something into the case
- your Macintosh IIsi is exposed to rain or any other excess moisture
- your Macintosh IIsi has been dropped or the case has been otherwise damaged
- you suspect that your Macintosh IIsi needs service or repair
- you want to clean the case (use only the recommended procedure described next)

Be sure that you always do the following:

- Keep your Macintosh IIsi away from sources of liquids, such as wash basins, bathtubs, shower stalls, and so on.
- Protect your Macintosh IIsi from dampness or wet weather, such as rain, snow, and so on.
- Read all the installation instructions carefully before you plug your Macintosh IIsi into a wall socket.
- Keep these instructions handy for reference by you and others.
- Follow all instructions and warnings dealing with your system.

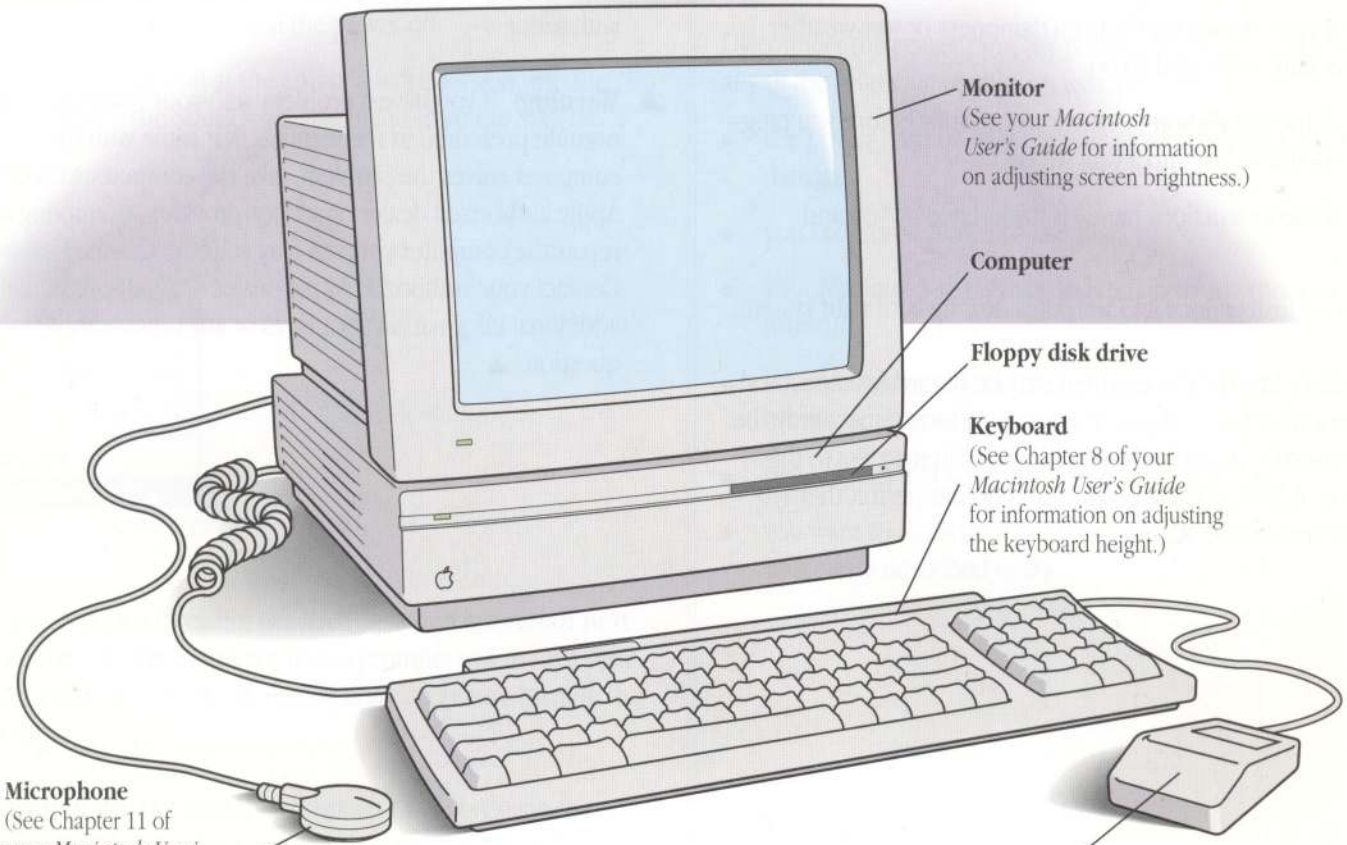
▲ **Warning:** Electrical equipment may be hazardous if misused. Operation of this product, or similar products, must always be supervised by an adult. Do not allow children access to the interior of any electrical product and do not permit them to handle any cables. ▲

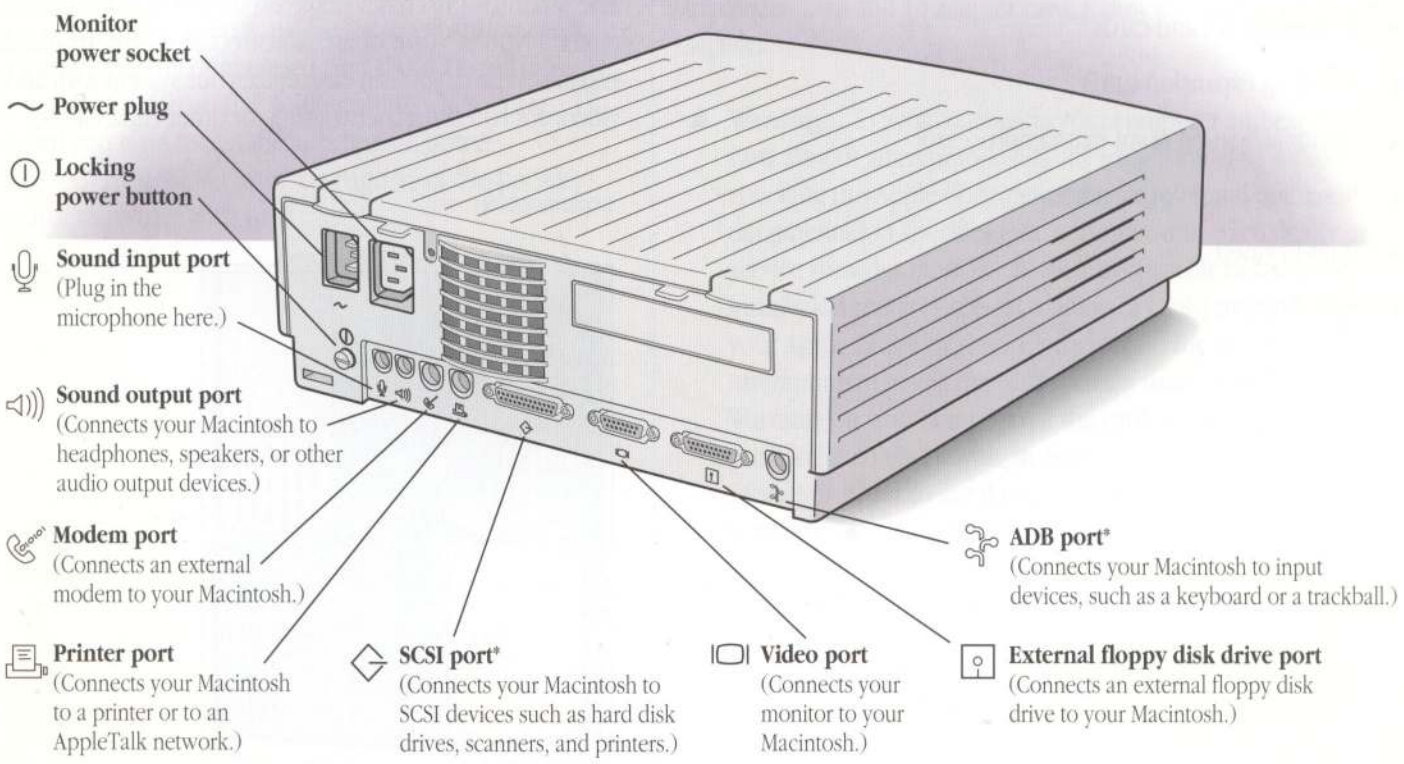
To clean the case, do the following:

1. Disconnect the power plug. (Pull the plug, not the cord.)
2. Wipe the surfaces lightly with a clean, soft cloth dampened with water.

▲ **Warning:** If you have a problem with your computer and nothing presented in the manuals that came with the computer solves the problem, take the computer to your Apple authorized dealer or service provider. Attempting to repair the computer yourself may void the Limited Warranty. Contact your authorized Apple dealer or service provider for additional information about this or any other warranty question. ▲

Your Computer at a Glance


Monitor
(See your *Macintosh User's Guide* for information on adjusting screen brightness.)
Computer
Floppy disk drive
Keyboard
(See Chapter 8 of your *Macintosh User's Guide* for information on adjusting the keyboard height.)
Microphone
(See Chapter 11 of your *Macintosh User's Guide* for information on recording sound.)
Mouse


Monitor power socket
Power plug
Locking power button
Sound input port
(Plug in the microphone here.)
Sound output port
(Connects your Macintosh to headphones, speakers, or other audio output devices.)
Modem port
(Connects an external modem to your Macintosh.)
Printer port
(Connects your Macintosh to a printer or to an AppleTalk network.)
SCSI port*
(Connects your Macintosh to SCSI devices such as hard disk drives, scanners, and printers.)
Video port
(Connects your monitor to your Macintosh.)
ADB port*
(Connects your Macintosh to input devices, such as a keyboard or a trackball.)
External floppy disk drive port
(Connects an external floppy disk drive to your Macintosh.)

*See Chapter 14 of your *Macintosh User's Guide* for more information.

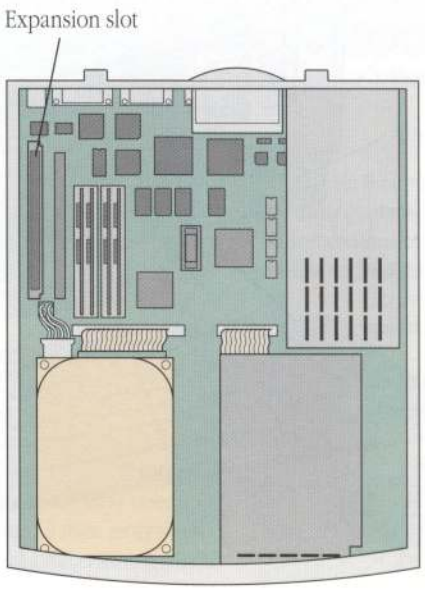
Technical Information

The following pages contain technical information about your Macintosh IIsi:

- Expansion slot and cards
- Installing expansion cards
- Optional floating-point math coprocessor
- Reset and interrupt switches
- Built-in video
- Specifications

Expansion slot and cards

The Macintosh IIsi has a single expansion slot designed to accept either a NuBus™ card or an 030 Direct Slot card. By installing an expansion card, you can customize your system with additional video, coprocessing, networking, or other capabilities.



Before you can install an expansion card in your computer, you need to purchase an adapter card. There are two types of adapter card—one for NuBus expansion cards and one for 030 Direct Slot cards. Adapter cards are available from your authorized Apple dealer or representative.

The Macintosh IIsi has been designed to meet Apple's NuBus and 030 expansion slot power specifications. Some expansion cards draw more power than recommended. You should avoid using such cards in your Macintosh IIsi. To determine whether the expansion card you want meets the appropriate power specification, see "Expansion Cards" on page 35 of this booklet and the manual that came with your card.

Installing an expansion card

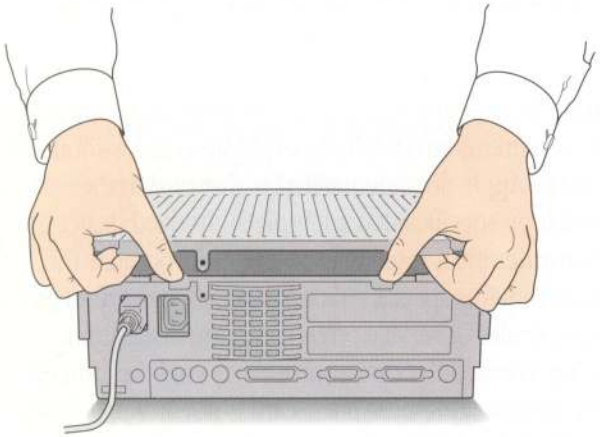
You may have purchased a NuBus card or an 030 Direct Slot card that provides additional video, coprocessing, networking, or some other capability to your Macintosh IIsi. Such cards require a separate adapter card for proper installation. To install an expansion card and an adapter card, follow the instructions in this section.

▲ **Warning:** To avoid damaging your computer and expansion card, do not attempt to install any expansion card without first checking the Apple documentation for that card. If the documentation specifies that an Apple authorized dealer or service provider must install the card (usually because the installation requires special training or tools), be sure to have your Apple dealer or service provider do the installation. Attempting to install the card yourself may void the Limited Warranty on your computer. If the card is not an Apple-labeled product, then check with an Apple authorized dealer or service provider to see if you can install it without voiding the warranty. ▲

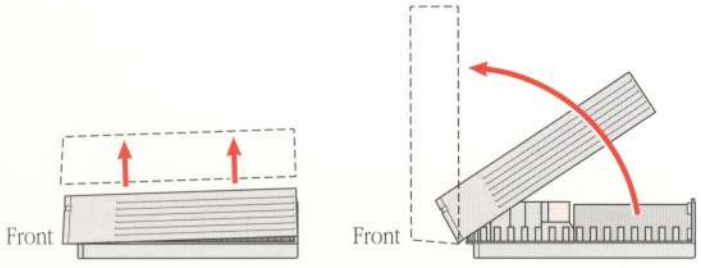
Opening the computer

1. **Remove the lid from the computer.**

   - Pull up on the two latches at the rear corners of the case and lift up the back of the lid.



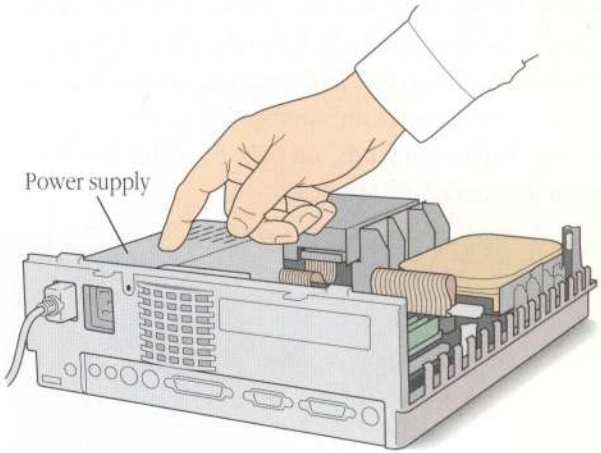
   - Lift the lid straight up and away from the case.



This **Not this**

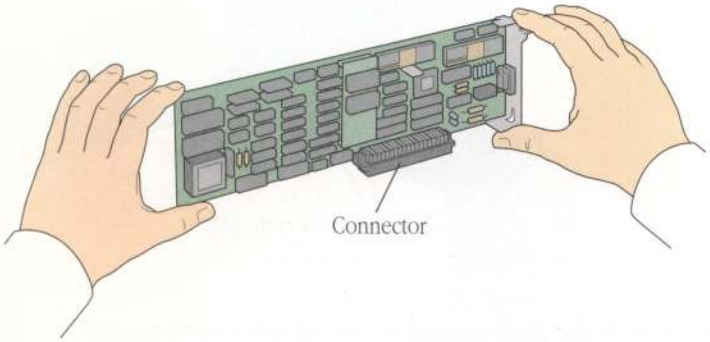
2. **Touch the metal part of the power supply case inside the computer to discharge any static electricity that might be on your clothes or body.**

   Always do this before you touch any parts, or install any components, inside the computer.



△ **Important:** The expansion and adapter cards you are installing in your computer are electrically sensitive. To avoid problems, observe two precautions:

- Discharge static electricity by touching the power supply case, as just described, before working with expansion or adapter cards.
- Handle the cards by their edges. Do not touch the connectors. △



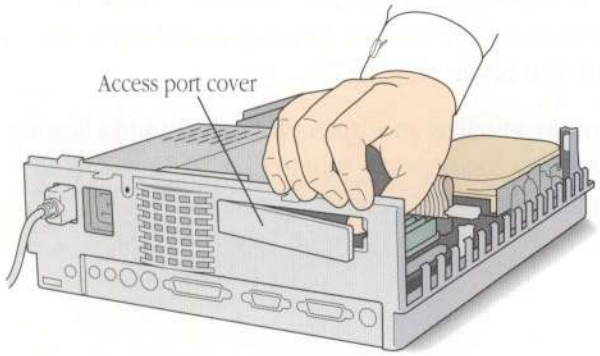
Now turn to the section that describes the installation process for your particular type of card:

- If you are installing a NuBus card, follow the instructions in the section "Installing a NuBus Card" that begins on page 22.
- If you are installing an 030 Direct Slot card, follow the instructions in the section "Installing an 030 Direct Slot Card" that begins on page 25.
- If you are installing an adapter card only (to add a floating-point math coprocessor), turn to page 30, "Installing an Adapter Card Only," for more information.

Installing a NuBus card

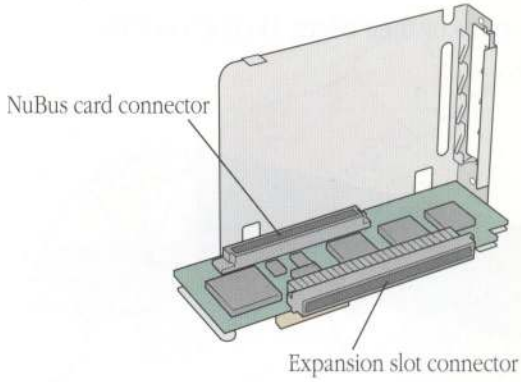
1. **Remove the cover from the access port on the back panel of your computer and set it aside.**

   Use your thumb to push out the access port.



2. **Remove the NuBus card and the adapter card assembly from their static-proof bags.**

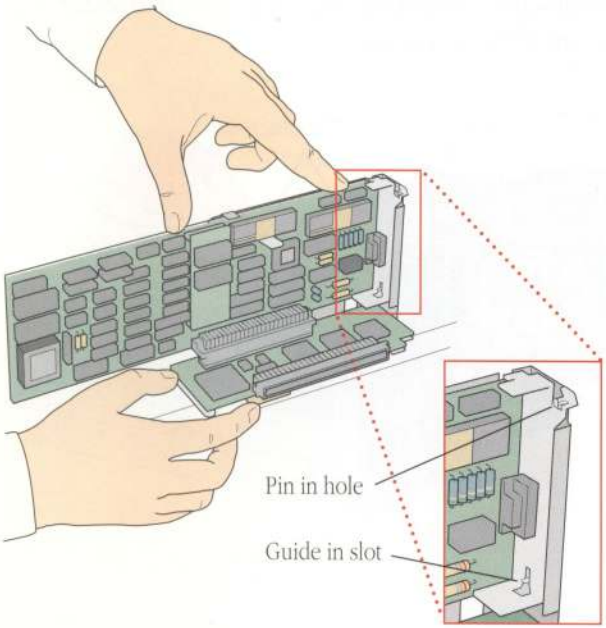
   The adapter card assembly consists of an adapter card attached to a metal bracket. You can safely touch any part of the assembly except the connectors on the card.



3. **Attach the NuBus card to the adapter card assembly.**

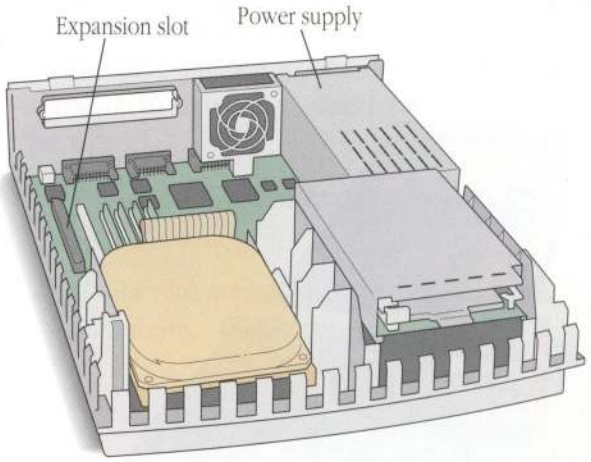
   - Rest the adapter card on the edge of a flat surface, such as your desk, with the metal bracket pointing up.
   - Slide the NuBus card into the bracket. The pin on the bracket should line up with the hole on the metal end of the card.
   - Press gently on the cards to push the connectors together.

When the cards are attached correctly, the pin fits into the hole and the guide fits into the slot, as shown in the illustration.



4. Locate the expansion slot on the main logic board.

The expansion slot is at the far left edge of the logic board as you face the front of the computer.



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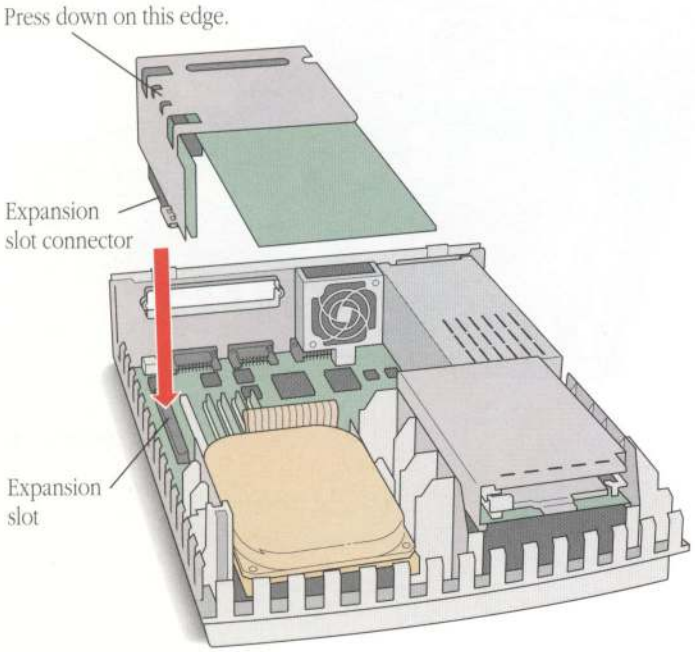
5. **Insert the connector on the adapter card into the expansion slot.**

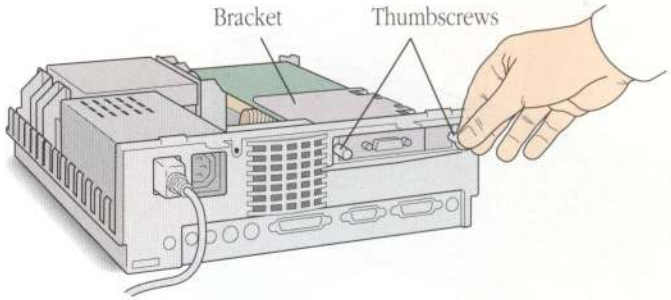
   Line up the connector with the slot. Then press down gently but firmly on the adapter card until the connector is fully inserted.



6. **Attach the thumbscrews.**

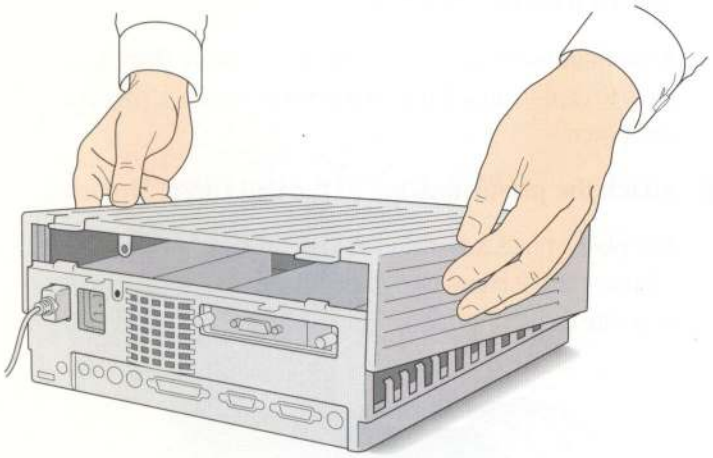
   Position the bracket against the access port while inserting and tightening the thumbscrews.

   The thumbscrews anchor the bracket in place and secure the NuBus card in the access port.



7. **Replace the lid on the computer.**

   Lower the lid onto the case, lining it up from the back of the computer to the front, and press firmly on the back corners until the rear latches snap into place.



Installing an 030 Direct Slot card

1. **Remove the 030 Direct Slot card and adapter card from their static-proof bags.**

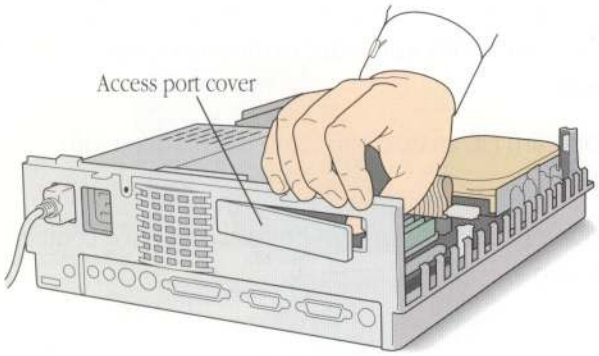
   Some cards have an external connector that must be accessible on the back panel of the computer. If your card has an external connector, it comes with additional parts that allow you to secure the connector to the access port on the back panel.

   - If your card has an external connector, continue with step 2.
   - If your card does not have an external connector, continue with step 4.

2. **Remove the cover from the access port on the back panel of your computer.**

   Follow this step only if your card has an external connector.

   Use your thumb to push the access port cover outward.



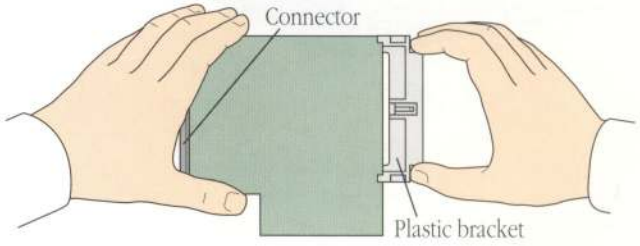
3. **Secure the card's external connector to the access port.**

   You may be able to attach the connector to the port using the thumbscrews that came with your adapter card. (If so, you won't need any additional tools.) Hold the connector in place with one hand while inserting and tightening the thumbscrews with the other hand.

   If the thumbscrews don't fit, use the hardware that came with the 030 card to attach the connector to the back panel of your computer.

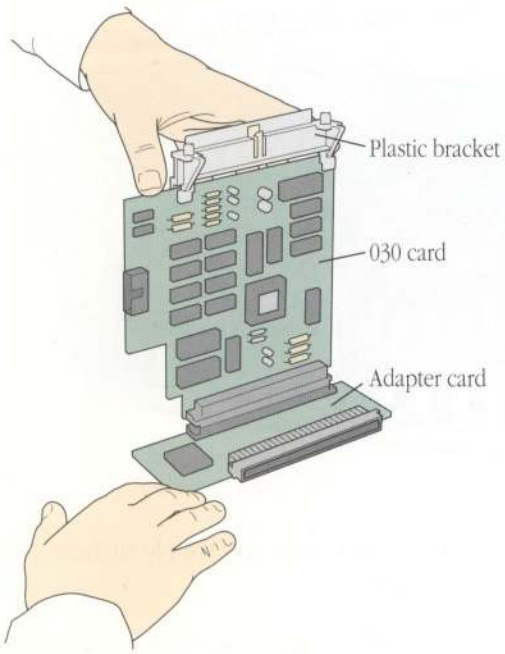
4. **Attach the plastic bracket to the 030 Direct Slot card.**

   The plastic bracket is included in the package with your adapter card. It snaps into place on the side of the card opposite the connector.



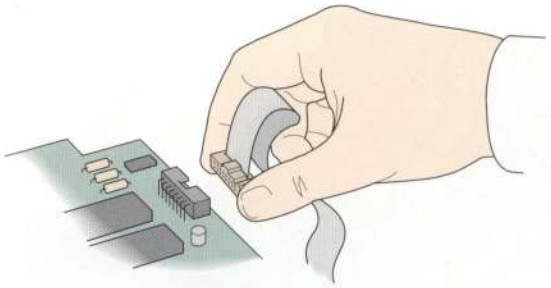
5. **Attach the 030 Direct Slot card to the adapter card.**

Press gently on the cards to push their connectors together. The cards will form a right angle with their chips facing inward. Don't flex the cards once they are attached, because this can damage the connectors.



6. **Attach the cable that links the external connector to the 030 card.**

If your 030 card does not have an external connector, skip to step 7.



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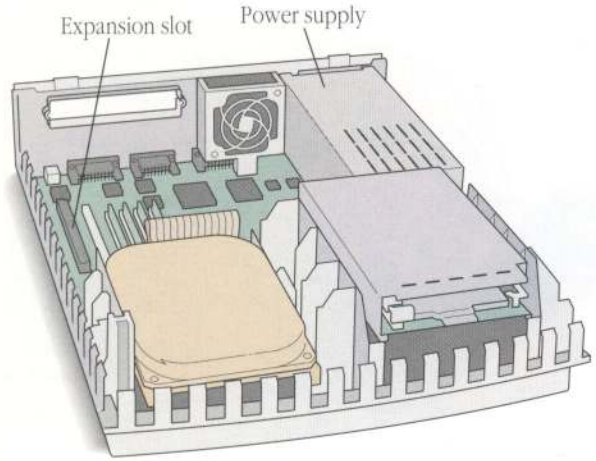
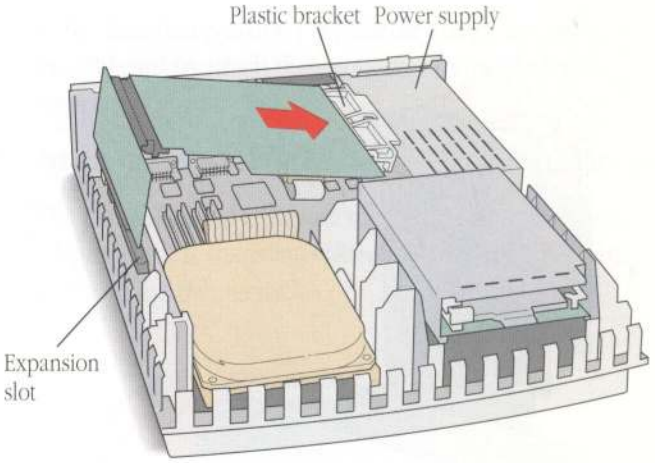
7. Locate the expansion slot on the main logic board.

The expansion slot is at the far left edge of the logic board as you face the front of the computer.



8. Attach the plastic bracket to the power supply.

Positioning the adapter card above the expansion slot, snap the tabs on the plastic bracket into the corresponding holes in the power supply case. Insert the tabs at a slight angle, as shown in the illustration.

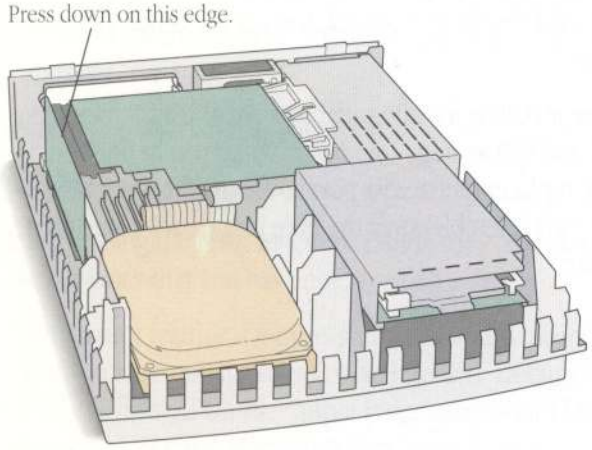


Attaching the plastic bracket to the power supply anchors your 030 card so it won't move.

❖ *Card doesn't reach?* If your 030 card is too short to reach the power supply, remove the plastic bracket from the card and continue with step 9. ❖

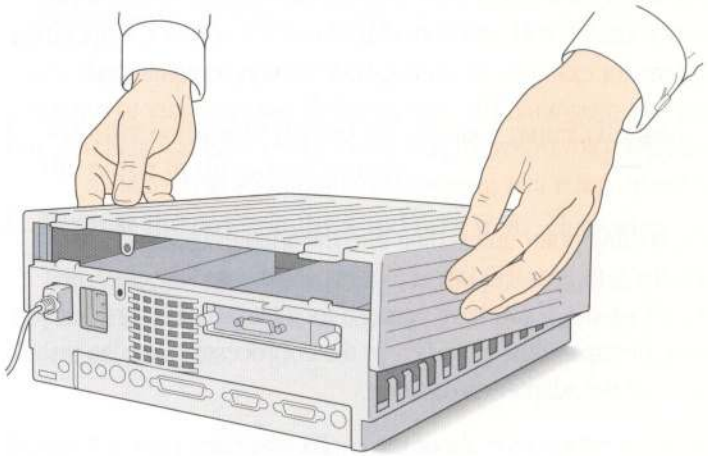
9. **Insert the connector on the adapter card into the expansion slot.**

Press down gently but firmly on the adapter card until the connector is fully inserted.



10. **Replace the lid on the computer.**

Lower the lid onto the case, lining it up from the back of the computer to the front, and press firmly on the back corners until the rear latches snap into place.



Optional floating-point math coprocessor

One of the options available for enhancing the performance of your Macintosh IIsi is a math coprocessor, the Motorola MC68882 floating-point unit.

You may want to add a math coprocessor to your system if you work routinely with software that requires it—the A/UX operating system, for example, or some CAD/CAM and sophisticated graphics programs. The coprocessor is not necessary to run most business software (word processors, spreadsheets, databases, and so forth), but it may improve the computer's performance.

The floating-point unit is built into the adapter cards used to install a NuBus or 030 Direct Slot expansion card in your Macintosh IIsi. If you have no need for an expansion card but you want the capabilities provided by the coprocessor, you can install either of the adapter cards alone.

For more information about the coprocessor, see your authorized Apple dealer or representative.

To install an adapter card, follow these steps:

Installing an adapter card only

- If you are installing an 030 Direct Slot adapter card, begin on page 25 and follow steps 7, 9, and 10. The chips on the adapter card should face inward, toward the center of the computer.
- If you are installing a NuBus adapter card assembly, begin on page 22 and follow steps 1 and 4–7. When you're finished, snap the replacement access port cover (it comes with the adapter card assembly) over the hole in the back panel of the computer.

Reset and interrupt switches

If you've used other models of Macintosh computers, you may already be familiar with reset and interrupt switches (also called the programmer's switch).

On the Macintosh IIsi, the functions of those switches are available as combination keystrokes on any Apple Desktop Bus keyboard:

Reset ⌘–Control–Power On

Interrupt ⌘–Power On

Because using the reset function restarts the computer, you will lose any work that you have not saved on a disk.

The interrupt feature is for programmers, and is meant to be used only if you have debugging software installed. Debugging software is available from APDA (the Apple Programmers and Developers Association). See the *Macintosh User's Guide* for more information about APDA.

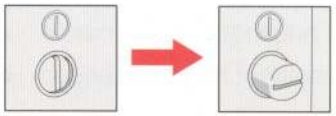
Locking power button

The power button on the back panel of the Macintosh IIsi can be locked on. This feature is provided for special applications, such as when the computer is used as a file server. With the button locked on, and with the appropriate software installed, the system restarts automatically if power to the computer is interrupted.

Follow these steps to lock the button on:

1. **With the computer turned off, insert a paper clip into the notch in the power button.**
2. **Depress the power button and turn it 90° clockwise.**

   The computer turns on as you press the power button. The button is locked when it is recessed and the notch is in a vertical position.



Locked Unlocked

❖ *If the computer is on:* If you lock the button while the computer is turned on, the computer will turn off. It can be turned on again only if you unlock the power button first. ❖

Follow these steps to unlock the power button:

1. **With the computer turned off, insert a paper clip into the notch in the power button.**
2. **Turn the power button 90° counterclockwise.**

   The button is unlocked when it pops out and the notch is in a horizontal position.

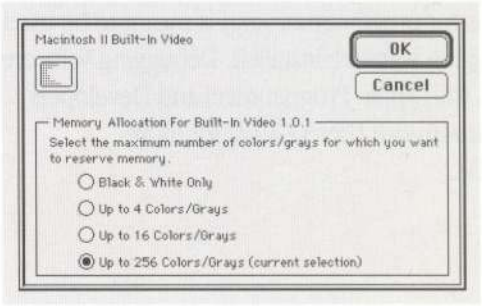
▲ **Warning:** This procedure turns off the computer. Save your work and quit application programs before unlocking the power button. ▲

Built-in video support

The Macintosh IIci comes with built-in video support on the main logic board. The more colors or grays you choose to display, the more of your computer's random-access memory (RAM) is used for video.

If you choose the maximum number of colors or grays, you may notice that some programs run more slowly. For the fastest system performance, set the monitor to display black and white.

If you want to change the amount of RAM set aside for video, click the Options button in the Monitors control panel and click the appropriate buttons in the dialog box that appears.


Macintosh II Built-In Video
OK
Cancel
Memory Allocation For Built-In Video 1.0.1
Select the maximum number of colors/grays for which you want to reserve memory.
Black & White Only
Up to 4 Colors/Grays
Up to 16 Colors/Grays
Up to 256 Colors/Grays (current selection)

Specifications

The hardware specifications for your Macintosh IIsi are listed below.

Main unit

Processor

- MC68030, 32-bit architecture, 20 megahertz (MHz) clock frequency (includes built-in memory-management unit)

Coprocessor

- Optional MC68882 floating-point unit, 20 MHz clock frequency (follows IEEE standards)

Memory

- 3 megabytes (MB) RAM, expandable to 17 MB
- 512K read-only memory (ROM), with ROM Single In-line Memory Module (SIMM)
- 256 bytes of parameter memory

Disk drives

- SuperDrive 1.4 MB high-density floppy disk drive (optional external 1.4 MB or 800K disk drive available)
- Internal Apple SCSI hard disk drive (1/3 height, 40 MB or 80 MB)
- Optional external SCSI hard disk drives

Sound generator

- Custom sound chip, including stereo sampling generator capable of driving stereo miniature phone jack headphones or stereo equipment

Interfaces

- One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other devices daisy-chained through a low-speed, synchronous serial bus (maximum of three devices)
- Video port supports color and monochrome monitors of various sizes and resolutions
- Internal expansion slot supports a NuBus or an 030 Direct Slot expansion card
- Two RS-232/RS-422 serial ports, 230.4 Kbit per second maximum (up to 0.920 Mbit per second if clocked externally)
- External floppy disk drive interface
- SCSI interface supports up to six external SCSI devices
- Stereo sound output port for external audio devices
- Sound input port for monaural sound input

Input

- Line voltage: 100–240 volts AC, RMS automatically configured
- Frequency: 50–60 Hz single phase
- Power: 74 watts maximum, not including monitor power

Output

- Output receptacle: 100–240 volts AC, RMS (determined by actual input voltage), 3 ampere maximum

Power

- 47 watts maximum

Current type	Total
+5 volt	6.8 amps
+12 volt	0.8 amps
–12 volt	0.3 amps

Clock/calendar

- CMOS custom chip with long-life lithium battery

Monitors

A variety of color and monochrome monitors are supported by built-in video (no video card is required), including:

- Macintosh 12" Monochrome Display
- Macintosh 12" RGB Display
- AppleColor High-Resolution RGB Monitor
- Apple Macintosh Portrait Display
- Some non-Apple monitors (see your authorized Apple dealer or representative for more information)

Other Apple and non-Apple monitors are supported by NuBus or 030 Direct Slot video cards.

Keyboard

- Standard or extended Apple keyboard with ADB connector

Mouse

- ADB mouse: mechanical tracking, optical shaft, or contact encoding

Microphone/Sound

- The microphone is an electret type, omnidirectional microphone that is powered by the computer. Microphone output voltage is 4 millivolts (mV) peak to peak at normal speaking volume.

❖ *Note:* You can also use adapters to input sound from audio equipment with line level outputs, but the line level signals must be attenuated before reaching the computer's sound input port. An attenuation of 500:1 is recommended when inputting line level signals. Appropriate attenuation cables and adapters are available from most electronics stores. ❖

RAM configurations

RAM in the Macintosh IIsi is provided both on the logic board (1 MB) and in packages called Single In-line Memory Modules, or SIMMs. The SIMMs contain dynamic RAM chips on a single circuit board, with electrical contacts (pins) along one edge that plug into the SIMM sockets on the computer's logic board.

Macintosh IIsi computers can work with any of several RAM configurations, depending on the density of the RAM chips that are mounted on the SIMMs.

△ **Important:** Macintosh IIsi SIMMs should be fast-paged mode 100 nanosecond (ns) RAM access time or faster. The slower 120 ns and 150 ns SIMMs available for some other models of Macintosh computers will not work in the Macintosh IIsi. In addition, the four 512K SIMMs used in the 3 MB Macintosh IIsi system configuration are compatible with the Macintosh IIsi and Macintosh IIci only; the four 2 MB SIMMs used in the 9 MB system configuration are compatible with the Macintosh IIsi, Macintosh IIci, and Macintosh LC only. Do not use the 512K and 2 MB SIMMs in any other Apple product. Consult your authorized Apple dealer or service provider for information and upgrades. △

▲ **Warning:** Do not attempt to install additional RAM yourself. Doing so will void the Limited Warranty on your computer. See your Apple authorized dealer or service provider for additional information about this or any other warranty question. ▲

Power requirements

Apple Desktop Bus

- Maximum power draw for all ADB devices: 500 mA
- Mouse draws 80 mA
- Keyboard draws 25–80 mA (varies with keyboard model used)

❖ *Note:* Up to three ADB devices can be daisy-chained to the ADB port. ❖

Expansion cards

❖ The Macintosh IIsi meets Apple's NuBus and 030 expansion slot power specifications. NuBus cards should not draw more than 15 watts and 030 Direct Slot cards should not draw more than 7 watts. Check the information that came with your expansion card to make sure the card does not exceed these specifications. ❖

- Connector type: DB-19

△ **Important:** All NuBus expansion cards must conform to FCC Class B and CSA requirements. Some NuBus cards, as labeled, conform to FCC Class A and CSA requirements. △

Size and weight

Weight	Height	Width	Depth
Main unit			
4.5 kg 10 lb.	100 mm 4 in.	310 mm 12.4 in.	372 mm 14.9 in.
Mouse			
0.17 kg 6 oz.	27.9 mm 1.1 in.	53.3 mm 2.1 in.	96.5 mm 3.8 in.
Keyboard*			
0.89–2 kg 1.96–4.5 lb.	32.5–60 mm 1.3–2.5 in.	405.3–490 mm 16.0–19.5 in.	142–190 mm 5.6–7.5 in.

*Keyboard size and weight vary with model selected.

Environment

Operating temperature

- 10° C to 40° C (50° F to 104° F)

Storage temperature

- –40° C to 47° C (–40° F to 116.6° F)

Relative humidity

- 5% to 95% (noncondensing)

Altitude

- 0 to 3048 m (0 to 10,000 ft.)

Keep this book for future reference

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